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MARSH MERCER KROLL
GUY CARPENTER OLIVER WYMAN

December 21, 2007

3rd Quarter Total Fund Review
Arizona State Retirement System

Terry Dennison, Los Angeles

Economic Environment

Economic Highlights Third-Quarter 2007

Positive

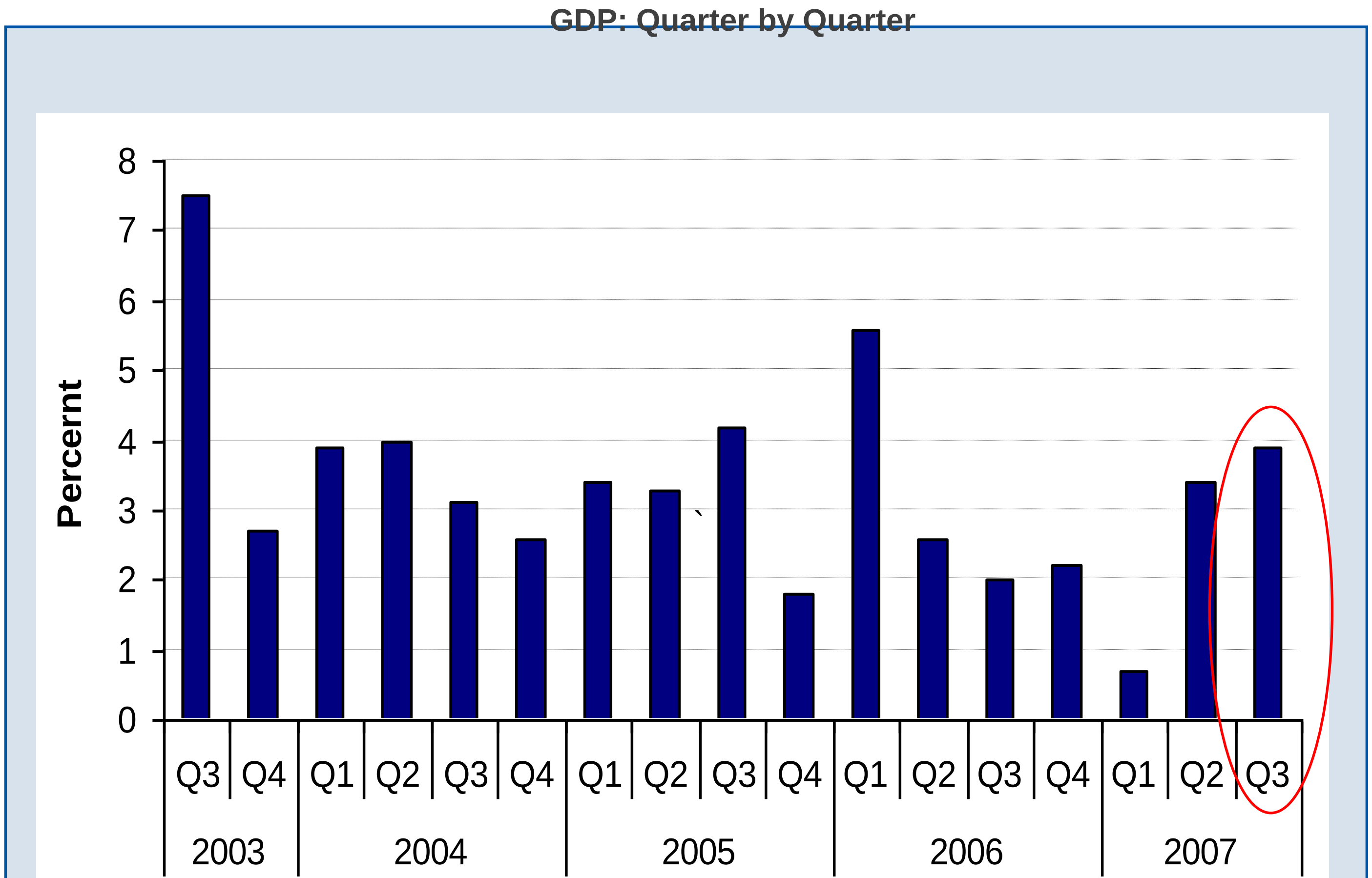
- Economic growth expanded at a solid pace of 3.9%
- Fed cut discount and federal fund target rate by 50 basis points
- Stronger-than-expected payroll growth
- Easing inflation: CPI +2.8%, CPI less food and energy +2.1%
- Producer Price Index increased by 1.4% and production capacity utilization is above the 1972 - 2006 average

Negative

- Consumer confidence slumped to a near 2-year low
- Tight credit market; spreads widened with focus on credit risks
- Unemployment rate rose from 4.5% to 4.7%
- Surging energy cost; oil prices jumped to over $80/barrel
- Housing market declined further - the index is below last quarter’s 15-year low and housing starts were down nearly 31%

Economic Growth Ahead of Analyst Expectations

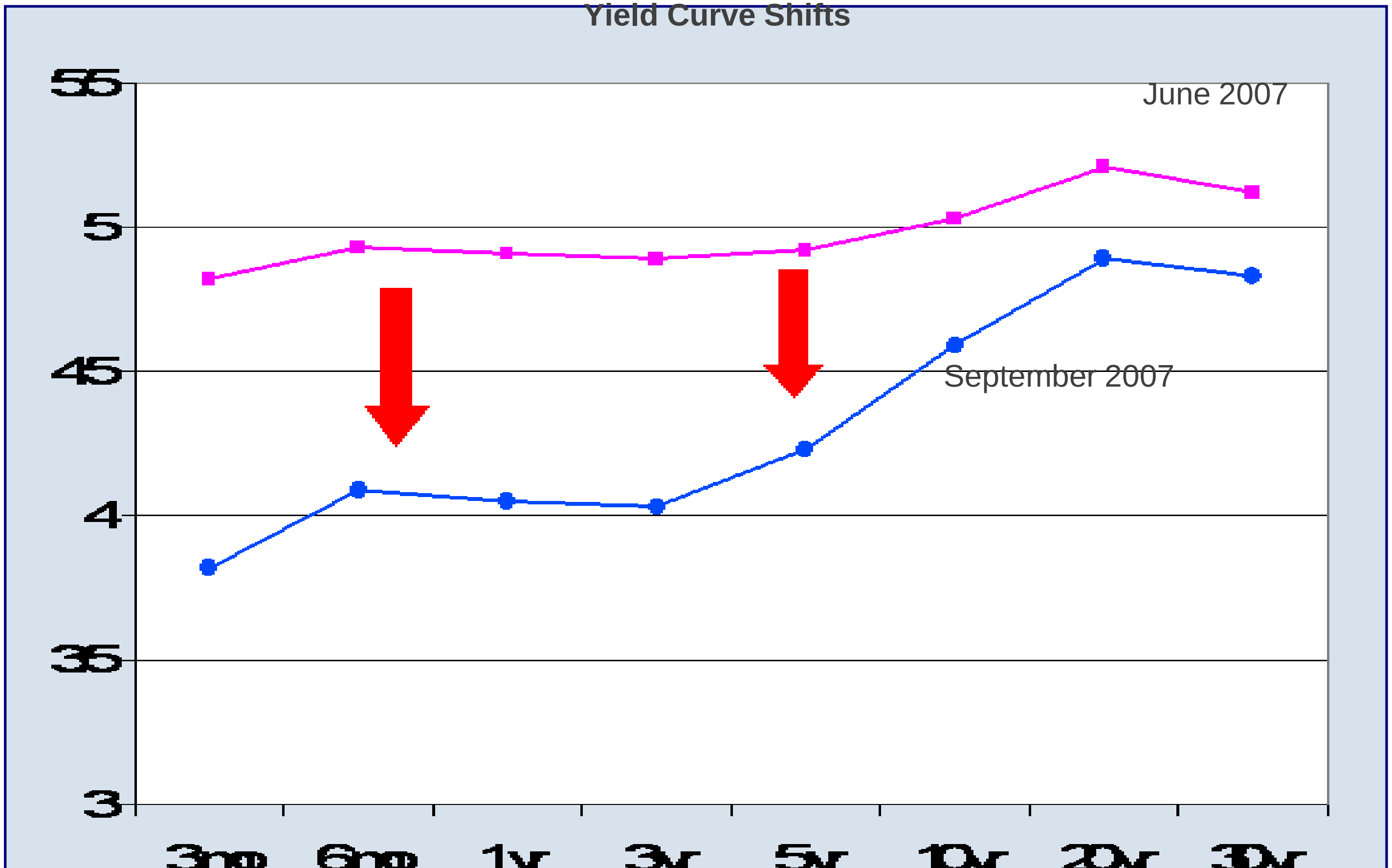
Led by an Increase in Consumer Spending and Exports



Source: Federal Reserve Bank of St. Louis

The Yield Curve Steepened During the Quarter

Two-Year Treasury Fell 90 Basis Points



Source: Federal Reserve Bank of St. Louis

Crisis Related to Sub-prime Mortgages Threatens the Financial System

Years of under-appreciation of risk all came home to roost the second week of August

Structured finance had sliced and diced streams of returns that defied an analysis of risks involved

- Models were used to assess risk and determine value
- Models assumed a normal distribution of expected events
- Events turned out not to be normally distributed

Collateralized Debt Obligations (CDOs) and Structured Investment Vehicles (SIVs) transferred underestimated risk to a broad range of investors

- Commercial and investment banks (U.S. and elsewhere)
- Enhanced cash and money market funds
- State/local investment pools
- Pension funds

Many Quant Models Failed in the Disorderly Markets of August

August 9, 2007

“Events that models only predicted would happen once in 10,000 years happened every day for three days.”

Matthew Rothman, Global Head of Quantitative Equity Strategies at Lehman Brothers, quoted in the September 2007 issue of *Institutional Investor’s Alpha*

The Most Expensive Four Words in the English Language

"It's Different This Time"

The Sub-prime Contagion
The Makings of the Credit Crunch and Its Effects

Easy Credit

- Low interest rates
- Rising home values
- Consumer piles on debt with home equity as source of funds
- Alt-A or No Doc Loans are marketed aggressively to the consumer by brokers and lenders
- Home equity loans are sold off into the asset- backed securities markets

Demand for Yield

- Primary buyers of sub-prime ABS securities were CDO managers, the bundlers
- CDOs are pools of loans and then get “rated” for investors to use to assess credit risk
- CDOs helped boost yield in portfolios
- CDOs provided a market for sub-prime loans originated by mortgage lenders

The Fallout

- Defaults start to rise
- Mortgage lenders shut down
- Macro hedge funds short ABS markets
- Market for sub-prime loans closes off
- Credit tightening; liquidity crunch
- Margin calls; liquidation of assets; markdowns
- Portfolios experience losses with markdowns

Collateral Damage

- Equity sell-off
- Quantitative manager models are disrupted
- LBO financing hurt due to tighter credit standards
- Banks are left holding the bag on LBO deals
- Quality mergers (no LBO) are hurt too

LEVERAGING

DE-LEVERAGING

Losses Are Huge, Growing, and Appearing Everywhere

- Sub-prime related losses are presently estimated to be $400bn
- This is not the worst of it - mortgage resets are going to peak in 2008 - 9
  - Three years from the worst vintage-years of loan origination: 2005, 2006, and 2007
- Ultimate losses could rise to $1tn ($1,000,000,000,000)
- Losses and uncertainty about them threaten the financial system itself
  - Banks are reluctant to lend to each other
  - Counterparty risk in securities lending and the swaps market is perceived as increasing
  - On several occasions, the commercial paper markets, the most elemental financing activity, virtually froze up
- Everyone is afraid of the unknown unknowns

An Example of the Projected Severity of the Losses

Data from a Highly Regarded Investment Manager's Model of a Major Commercial Bank's ABS Portfolio

Subprime 2005 ABS

Collateral	% Exposure	Loss % Exposure
AAA layer	81.2%	0.0%
AA layer	9.6%	2.0%
A layer	3.9%	12.0%
BBB layer	2.7%	33.0%
Equity	2.7%	50.0%
Total	100.0%	2.9%

Alt A 2005 ABS

Collateral	% Exposure	Loss % Exposure
AAA layer	92.8%	0.0%
AA layer	3.8%	2.0%
A layer	0.9%	12.0%
BBB layer	0.7%	33.0%
Equity	1.9%	50.0%
Total	100.0%	1.4%

Subprime 2006 ABS

Collateral	% Exposure	Loss % Exposure
AAA layer	81.2%	11.0%
AA layer	9.6%	52.0%
A layer	3.9%	74.0%
BBB layer	2.7%	89.5%
Equity	2.7%	100.0%
Total	100.0%	21.9%

Alt A 2006 ABS

Collateral	% Exposure	Loss % Exposure
AAA layer	92.8%	11.0%
AA layer	3.8%	52.0%
A layer	0.9%	74.0%
BBB layer	0.7%	90.0%
Equity	1.9%	100.0%
Total	100.0%	15.3%

Subprime 2007 ABS

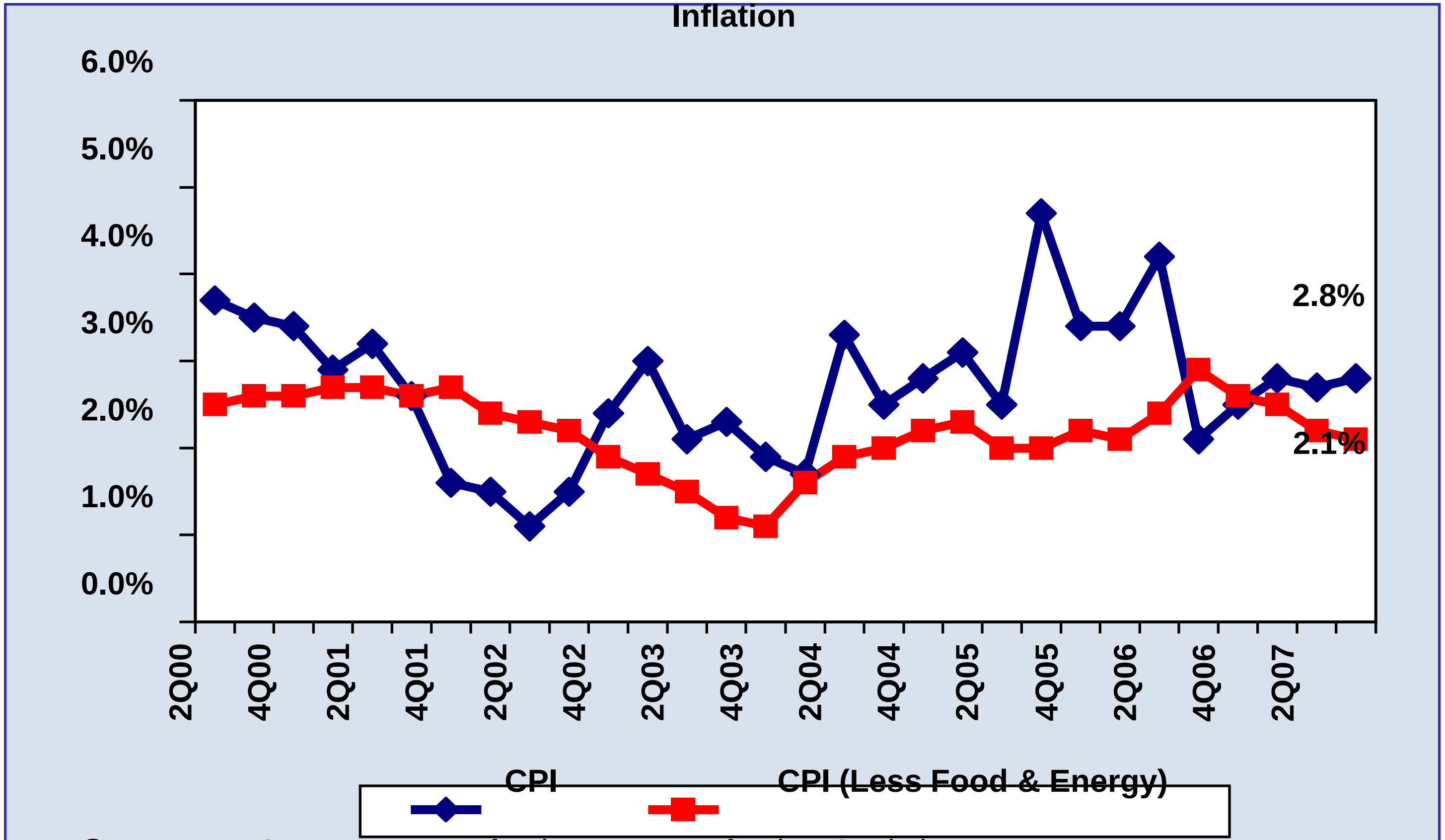
Collateral	% Exposure	Loss % Exposure
AAA layer	81.2%	12.8%
AA layer	9.6%	54.8%
A layer	3.9%	76.2%
BBB layer	2.7%	90.4%
Equity	2.7%	100.0%
Total	100.0%	23.7%

Alt A 2007 ABS

Collateral	% Exposure	Loss % Exposure
AAA layer	92.8%	13.0%
AA layer	3.8%	55.0%
A layer	0.9%	76.0%
BBB layer	0.7%	90.0%
Equity	1.9%	100.0%
Total	100.0%	17.1%

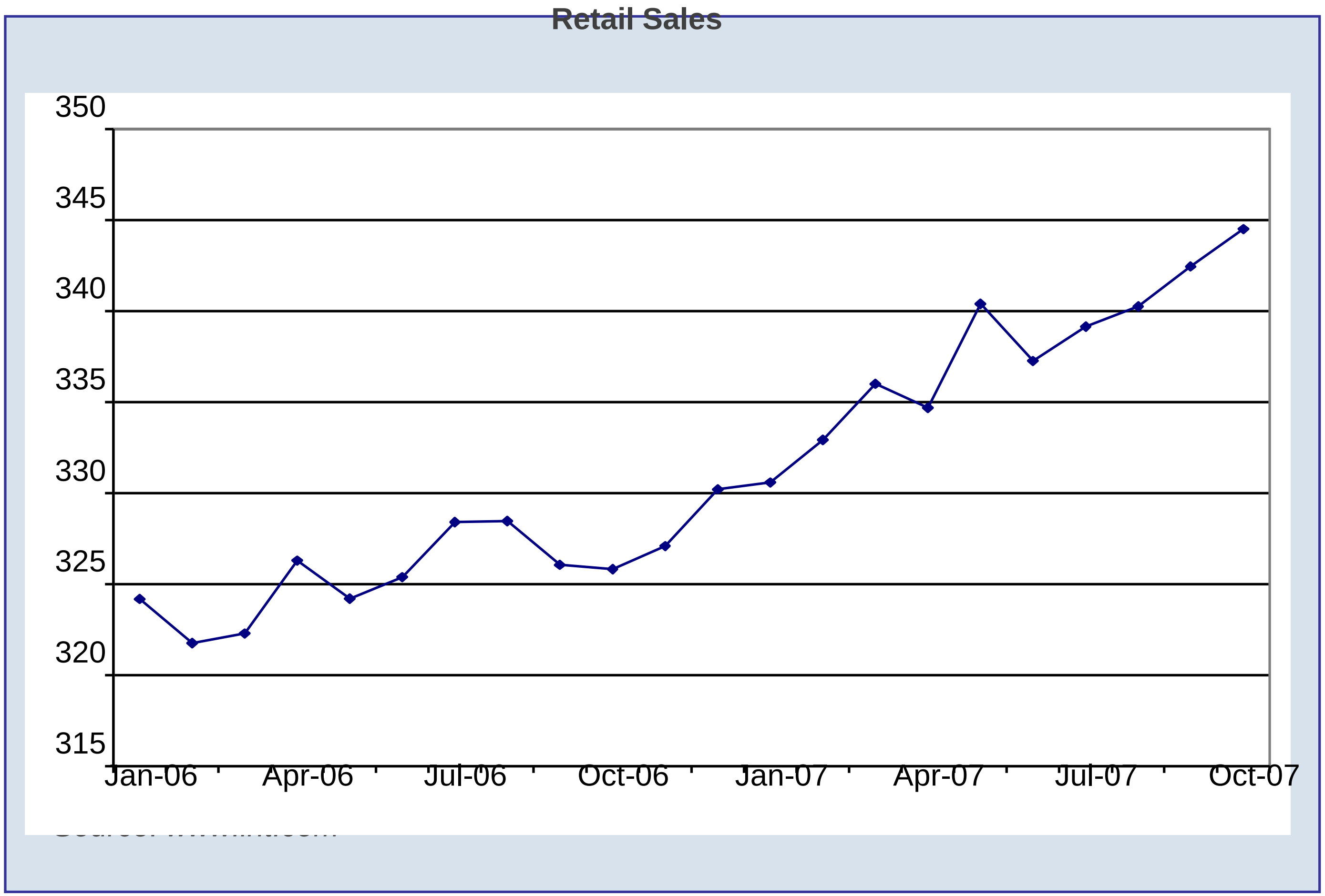
Inflation Remained Contained

But Continued to Be a Threat



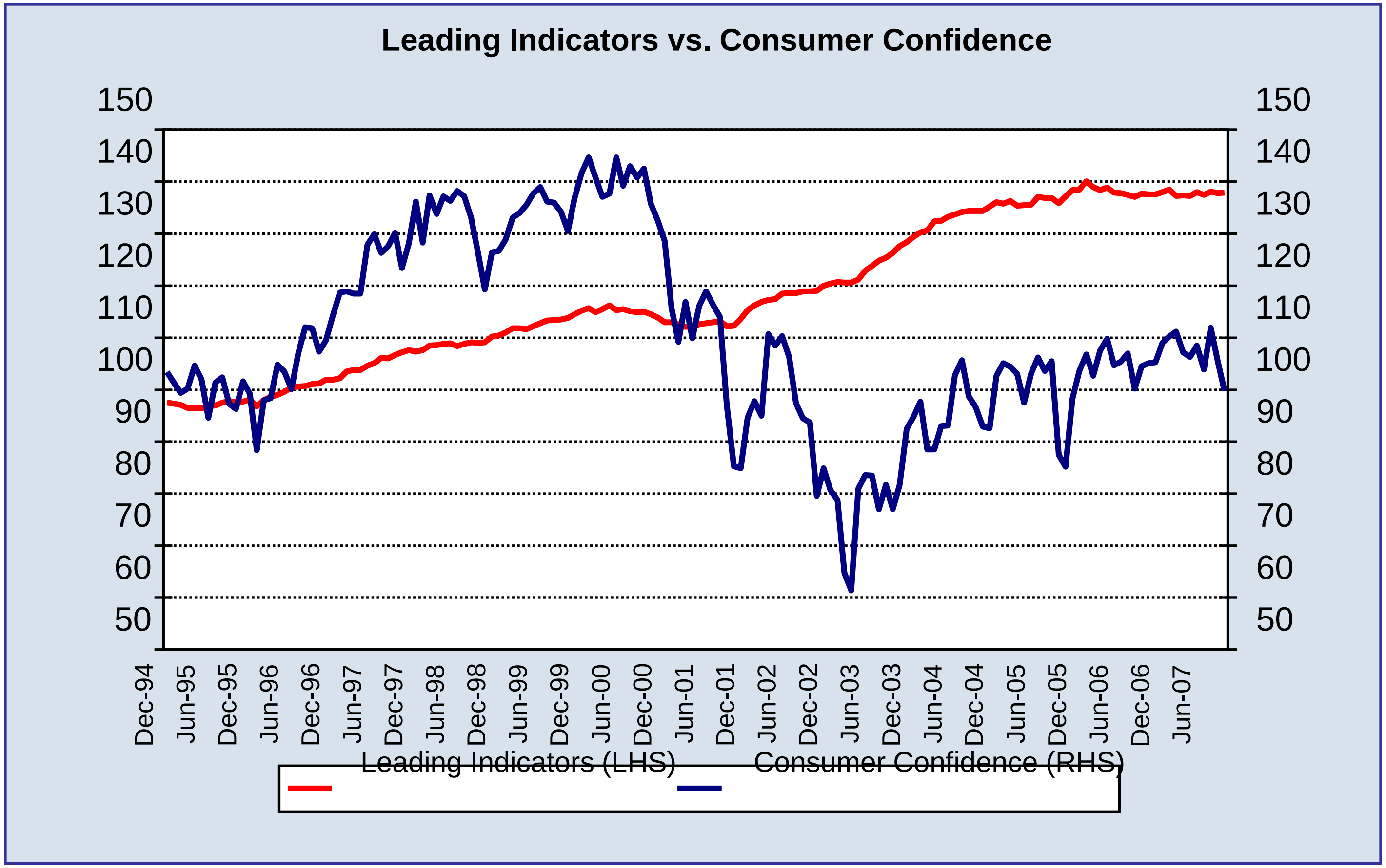
Source: U.S. Department of Labor Bureau of Labor Statistics.
All Urban Consumers. Year-over-year. Seasonally Adjusted.

Retail Sales Rose
Despite Weak Demand for Housing-Related Goods

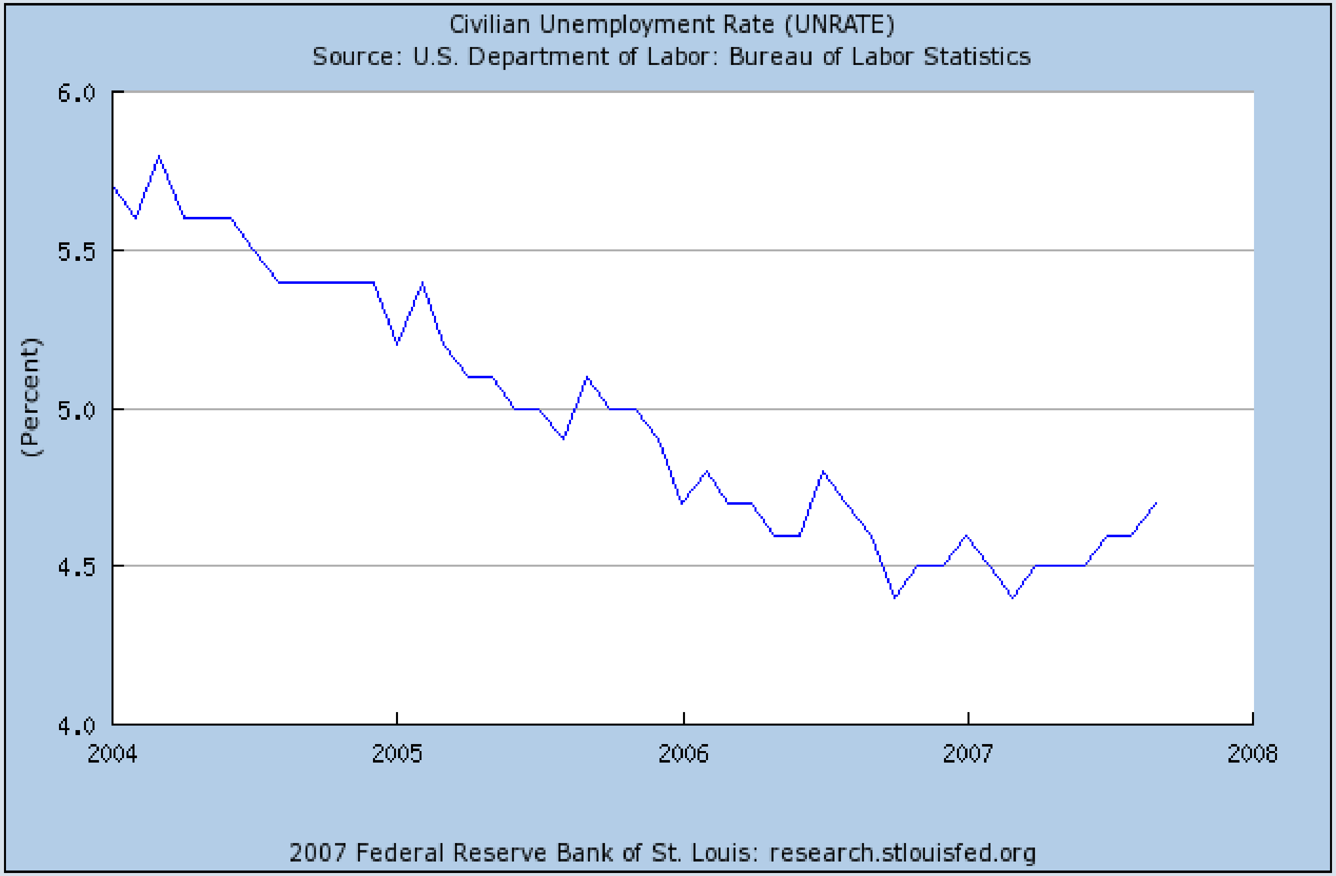


Leading Indicators Remained Positive

However, Consumers Are Worried about Overall Economy

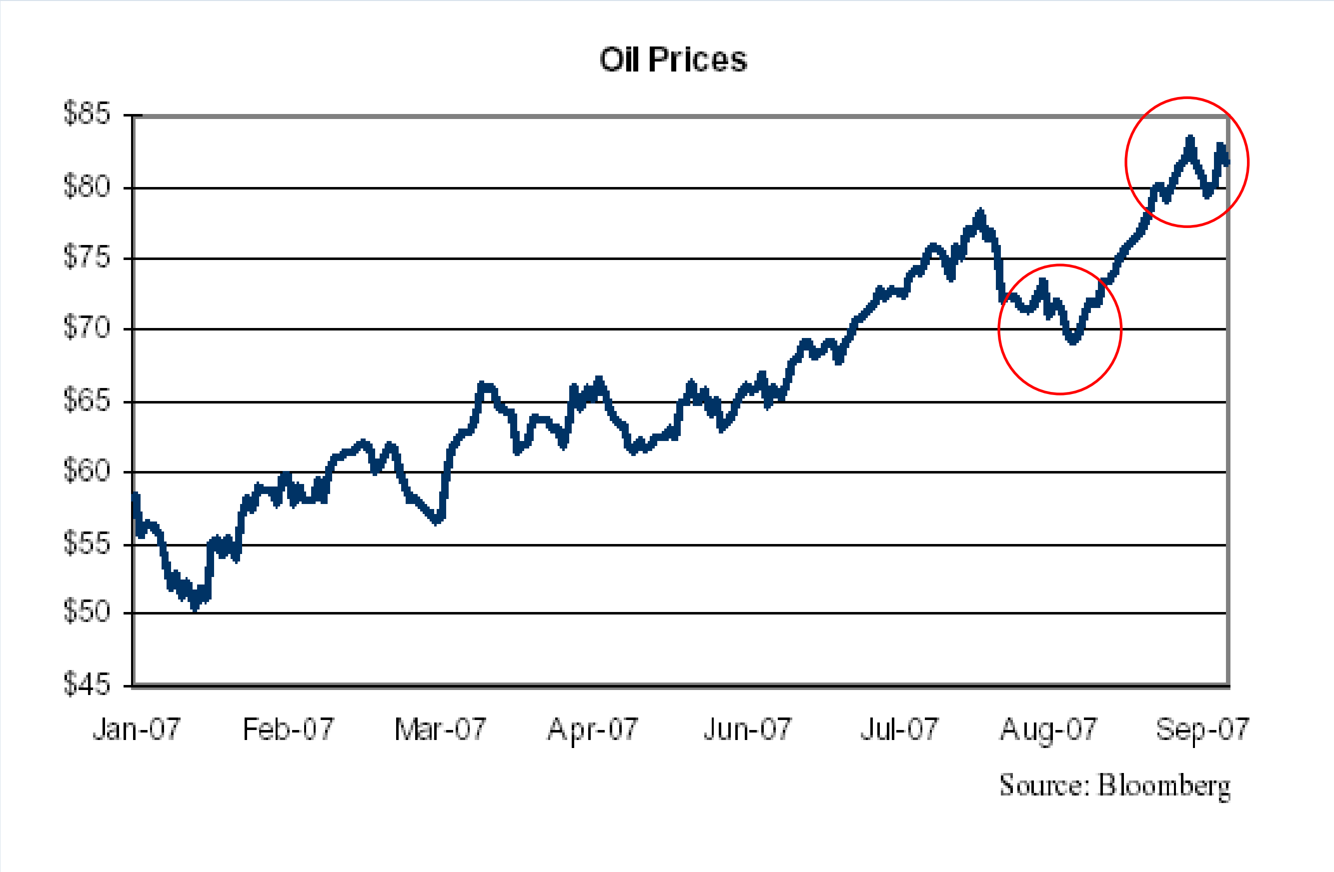


Labor Market Shows Signs of Weakness
Despite Stronger-Than-Expected Payroll Growth

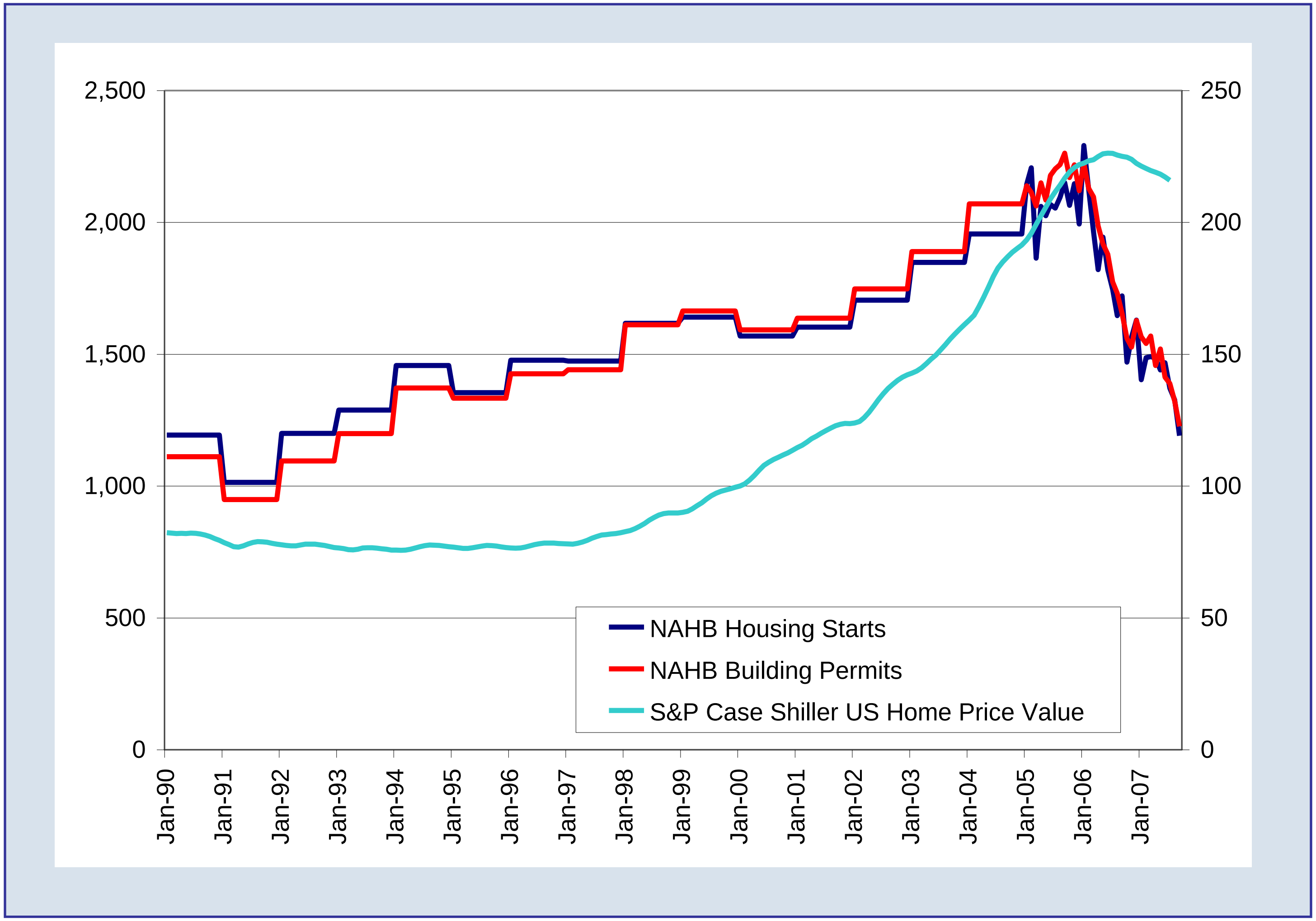


Source: Federal Reserve Bank of St. Louis

Spot Price for Crude Oil
Broke the $80/Barrel Mark and Keeps Going Higher



Housing Construction Continues to Contract
Building Permits and Housing Starts Plummeted



Securities Markets

Market Highlights Third-Quarter 2007

Positive

- Despite credit market turmoil, modestly good equity results
- Growth outperformed value, the longest such stretch since early 2000
- A weak dollar had a significant impact on performance
- Pacific ex Japan and Emerging Markets posted strong returns
- Treasury bonds gained 3.8%, the highest return since 3Q2002
- Equity REITs recovered and gained 2.6% for the quarter

Negative

- Weakest performer was small cap value, losing 6.3%
- Financial services, autos & transportation and consumer discretionary sectors were weak
- Europe and Japan posted negative returns in local terms
- High-yield bonds: average spread to Treasuries widened to 434 bps
- Hedge funds (+1.4%) under-performed public equity markets
- Private equity firms hit the lowest level of fundraising in two years

U.S. Equity Fed Rate Cut Restored Confidence

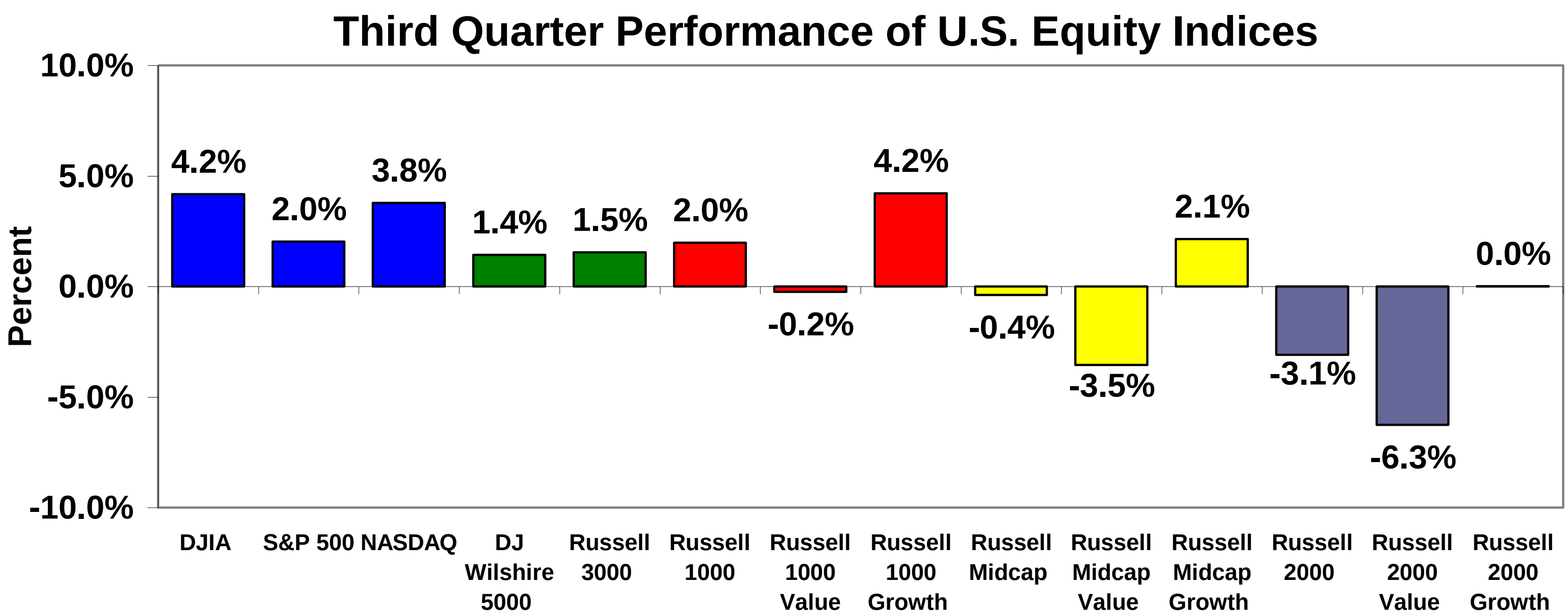
Value Stocks Posted Losses

Capital Markets: U.S. Large Cap Equity Market

Amid concerns of sub-prime fallout during the early part of the quarter most markets bounced back into positive territory during the latter part of August through the end of September

Small cap and mid cap core and value had negative results

Growth stocks outperformed value issues, with value posting losses across all market caps



Large Cap Stock Outperformed Mid and Small Cap
Strong Gains in Integrated Oil, Technology and Energy

Capital Markets: U.S. Large Cap Equity Market

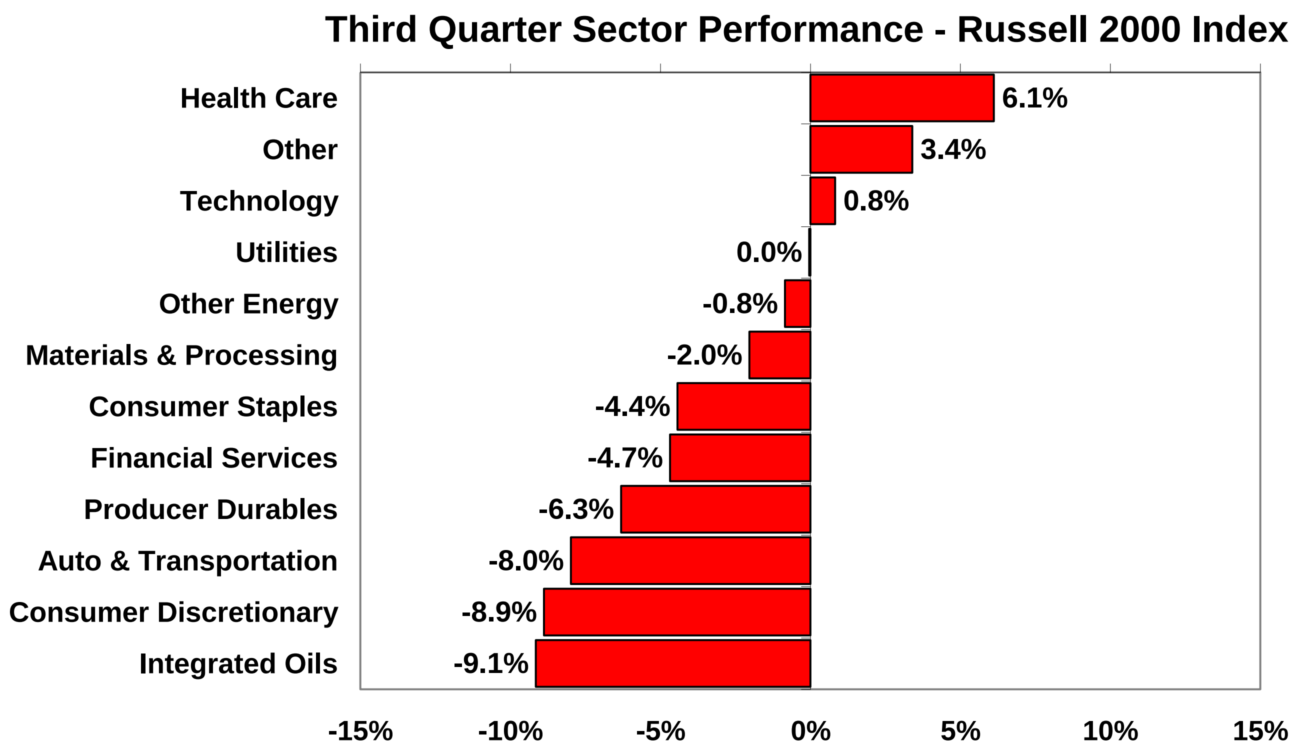
Most sectors outperformed or posted gains

Consumer discretionary, autos & transportation and financial stocks lagged because of the sub-prime mortgage fallout, deteriorating housing market and higher energy prices

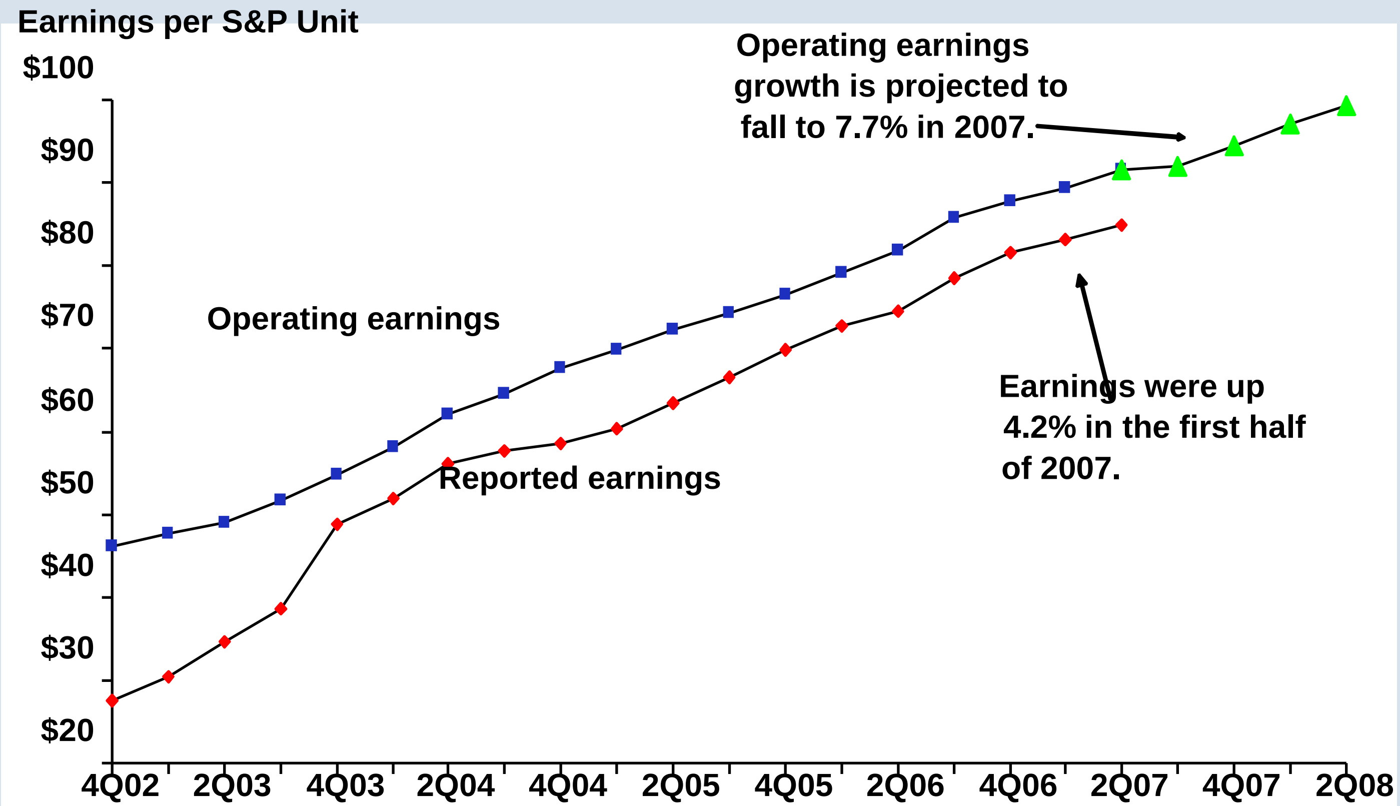
Small Cap Stocks Finished in the Red
Poor Performance in Consumer Stocks

Capital Markets: U.S. Small Cap Equity Market

- Small cap value stocks were the weakest performers, losing 6.3%
- Growth stocks outperformed value because of dominant financial sector weighting in value
- As with large cap, consumer discretionary, auto & transportation and financials performed poorly



Domestic Equity
S&P 500 Trailing Fourth-Quarter Earnings per Unit



Source: Standard & Poor's

Third-Quarter Provided Varied Results

Growth outperformed value again, the longest stretch since early 2000

Large cap outperformed small cap by far

3Q2007	Growth	Core	Value
Large	4.21	1.98	-0.25
Mid	2.15	-0.38	-3.54
Small	0.02	-3.10	-6.26
Note: Russell 1000, Mid-Cap, 2000 Indices: Growth, Core, Value			

One-Year Returns Still Far Above Expectations

Mid cap growth was top performing

Small cap value lagged by far

1-Year Returns	Growth	Core	Value
Large	19.37	16.92	14.46
Mid	21.24	17.89	13.78
Small	18.93	12.32	6.06
Note: Russell 1000, Mid-Cap, 2000 Indices: Growth, Core, Value			

Three-Year Results Are Strong

Returns for all asset classes are well above long-term expectations

Mid cap returns were ahead across all styles

3-Year Returns	**Growth**	**Core**	**Value**
Large	**12.20**	**13.77**	**15.25**
Mid	**17.02**	**17.35**	**17.22**
Small	**14.08**	**13.33**	**12.48**
Note: Russell 1000, Mid-Cap, 2000 Indices: Growth, Core, Value			

Cumulative 3-Year Results Are Also Impressive

Performance convergence across styles and capitalization

Mid cap outperformed large and small

Cumulative 3-Year	Growth	Core	Value
Large	41.25	47.26	53.08
Mid	60.24	61.60	61.07
Small	48.47	45.56	42.31

Note: Russell 1000, Mid-Cap, 2000 Indices: Value, Core, Growth

Five-Year Results Are Considerably Above Expectations

Large growth is still lagging

Mid cap is superior across all capitalization ranges

5-Year Returns	Growth	Core	Value
Large	13.85	15.99	18.06
Mid	20.40	20.91	21.02
Small	18.69	18.74	18.69
Note: Russell 1000, Mid-Cap, 2000 Indices: Growth, Core, Value			

Cumulative 5-Year Results Nearly All Represent a Doubling or More

Large cap performance is weakest

Mid cap is outperforming small- and large cap

Spread between styles begins to close

Cumulative 5-Year	**Growth**	**Core**	**Value**
Large	**91.28**	**109.94**	**129.36**
Mid	**153.01**	**158.41**	**159.59**
Small	**135.54**	**136.04**	**135.54**
Note: Russell 1000, Mid-Cap, 2000 Indices: Value, Core, Growth			

Non-U.S. Equities Slightly Outpaced Domestic Market
Significant Impact of Weak U.S. Dollar

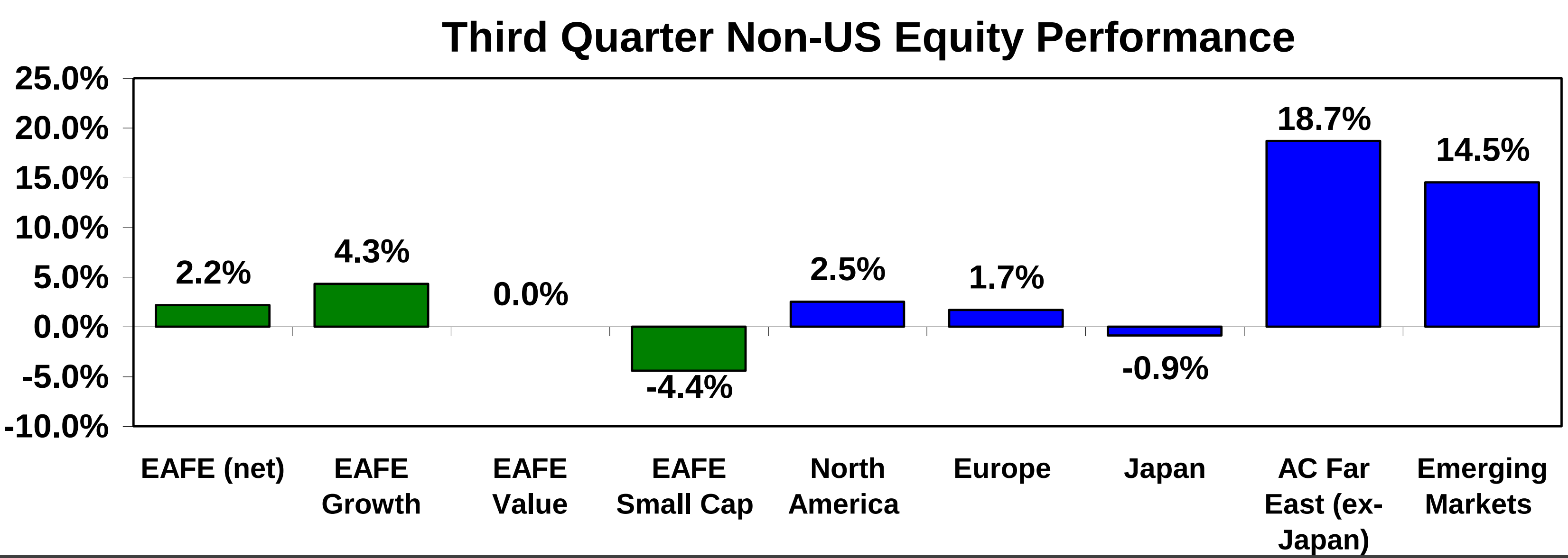
Capital Markets: Non-U.S. Equity Markets

Credit crunch creating some changes in market dynamics
- M&A market dried up; repricing of risk; increased volatility; widening of spreads. Most central banks reversed tightening policy views

Performance was mixed across sectors and regions

EAFE, Europe and Japan posted negative returns in local currency terms; however, the continued dollar depreciation helped most markets realize positive results

Emerging markets continued to rally, with strong performance in China, Latin America and Emerging Europe



MSCI All Country World ex U.S. Outperformed MSCI EAFE

Value outperformed growth over 5 years

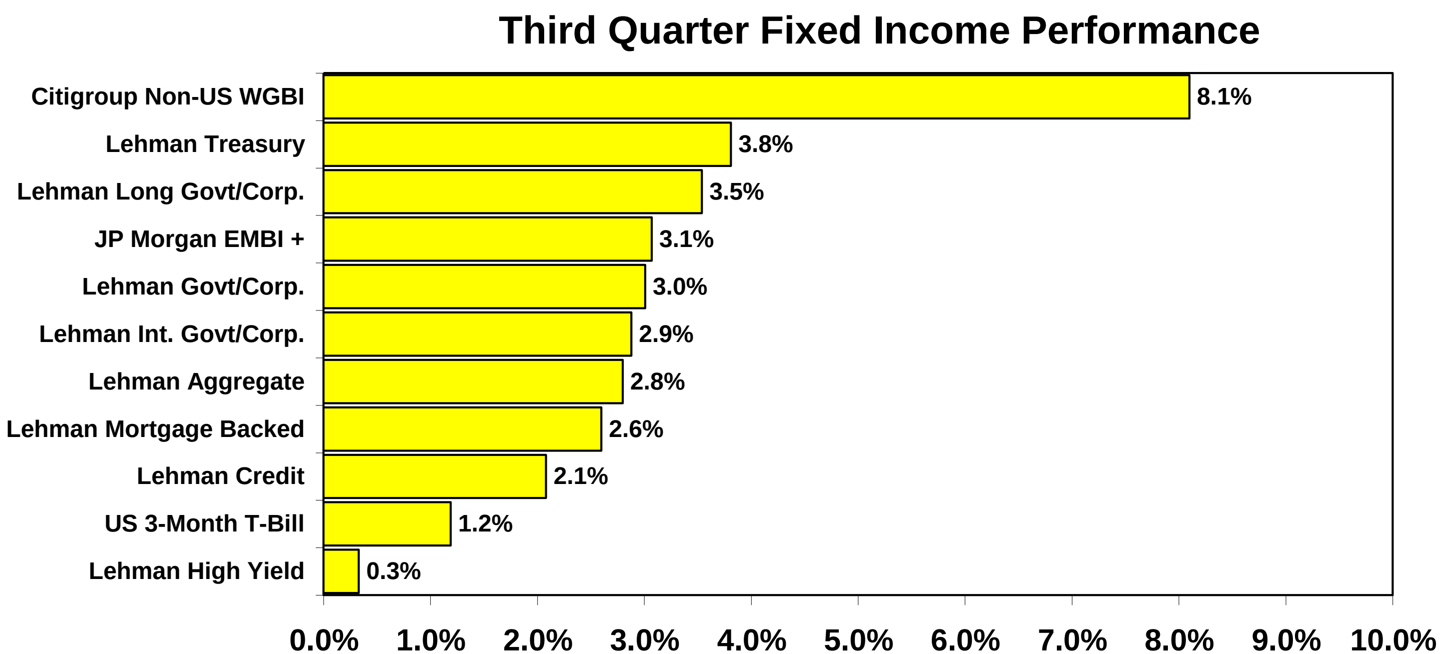
Growth was strong during the past quarter

As of Sep 2007 (Q3)	3 Months	1 Year	3 Years	5 Years
MSCI AC Wld ex US	4.69%	31.06%	26.53%	26.34%
MSCI AC Wld ex US Growth	6.43%	33.42%	26.27%	24.18%
MSCI AC Wld ex US Value	2.93%	28.69%	26.74%	28.45%
MSCI EAFE	2.23%	25.38%	23.75%	24.05%
MSCI EAFE Growth	4.37%	28.19%	23.45%	21.78%
MSCI EAFE Value	0.09%	22.54%	23.99%	26.26%

U.S. Fixed Income Posted Strong Returns
Treasury Yield Curve Steepened 61 Basis Points

Capital Markets: Fixed Income Market

- Bond market bounced back as investors' flight to safer segments and aggressive Fed rate cut pushed yields lower
- Yield curve steepened during the quarter as the 2-year Treasury yield fell 90 bps
- Higher-rated debt performed better; average corporate spread widened 53 bps
- Non-U.S. bonds were the highest-performing segment, which is attributable to dollar weakness



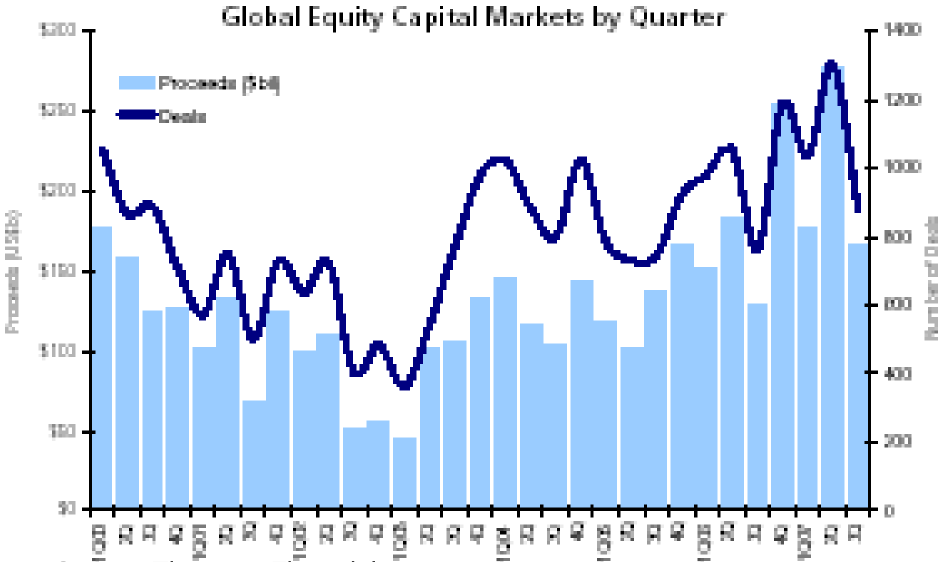
Private Equity
Fundraising Cools Off

Capital Markets: Alternatives – Private Equity

Private equity firms globally hit the lowest level of fundraising in two years; $91 billion in private equity funds was raised. Last quarter’s $177 billion raised was a record

Buyout funds, which use high levels of debt to fund acquisitions, were impacted by the credit crunch caused by U.S. sub-prime mortgages

The venture capital sector raised $19.2 billion, a 56% increase from the previous quarter

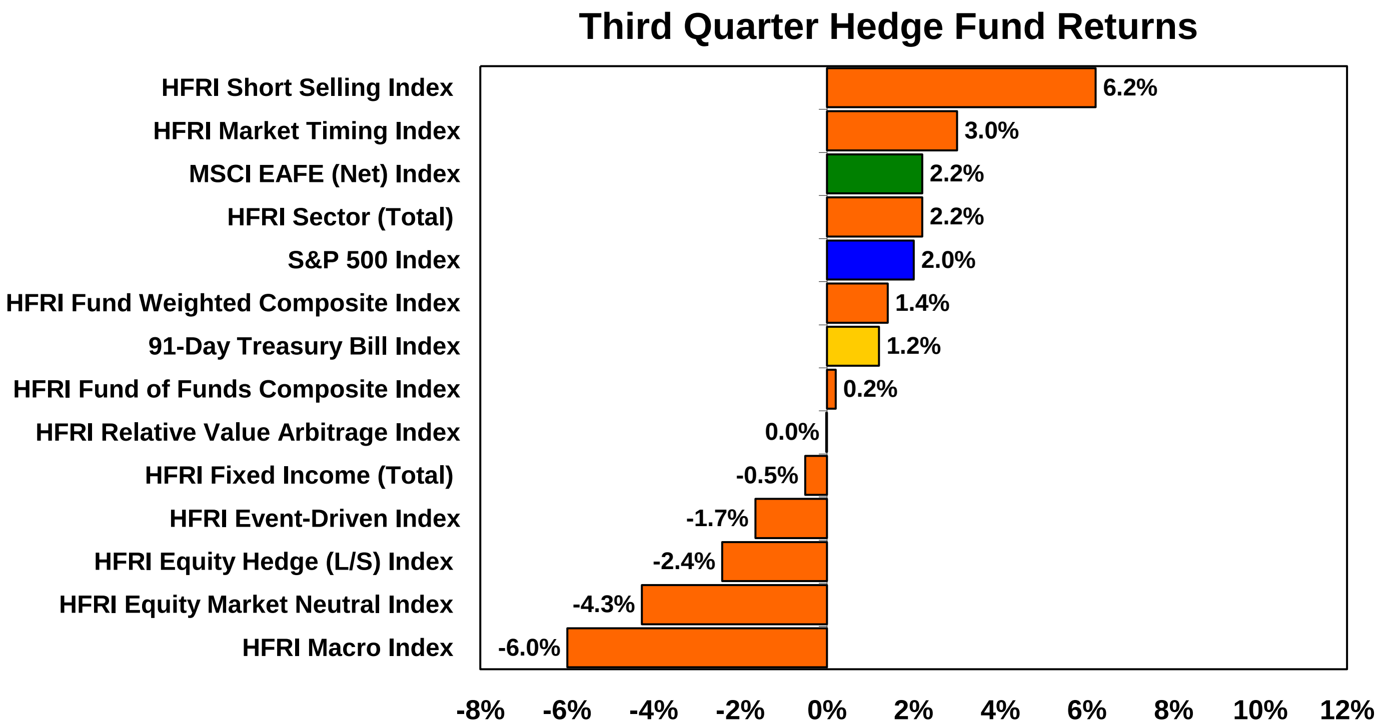


Source: Thomson Financial

Hedge Funds with Mixed Results
Weighted Composite Index Underperformed Equity Markets

Capital Markets: Alternatives – Hedge Funds

- Hedge funds' weighted composite returned 1.4%, underperforming the public equity markets
- Overall, market timing and sector strategies prospered, while macro and equity market-neutral strategies struggled

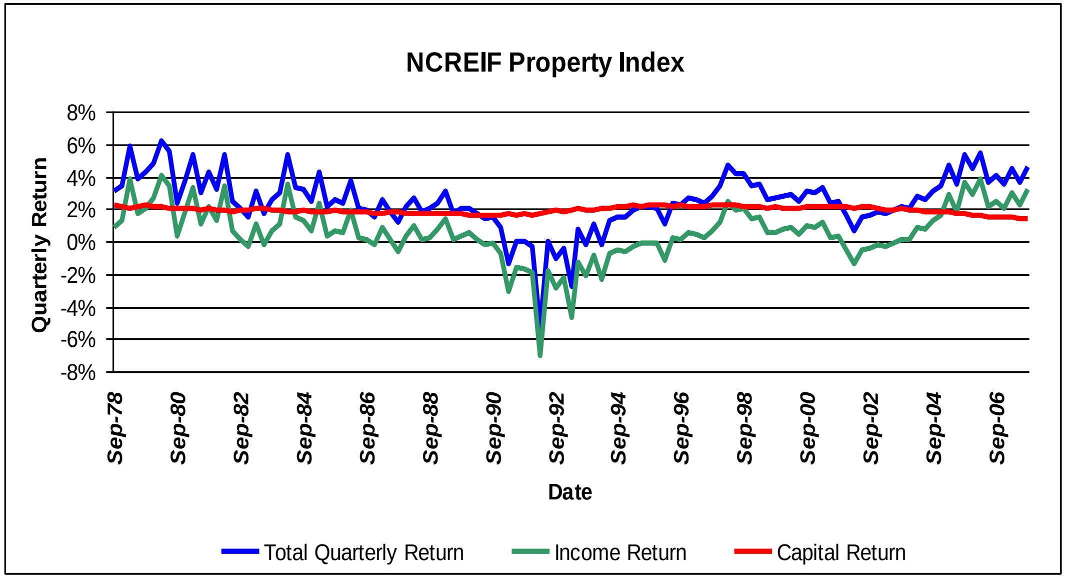


Source: Hedge Fund Research, Inc. Includes over 6,000 constituent funds. Includes both domestic and offshore funds. All funds report assets in USD. All funds report Net of All Fees returns on a monthly basis. Weighted Composite Index excludes fund of funds.

Real Estate Heads Public Equity Market
REITs Recovered from a Sharp Drop in July

Capital Markets: Alternatives – Real Estate

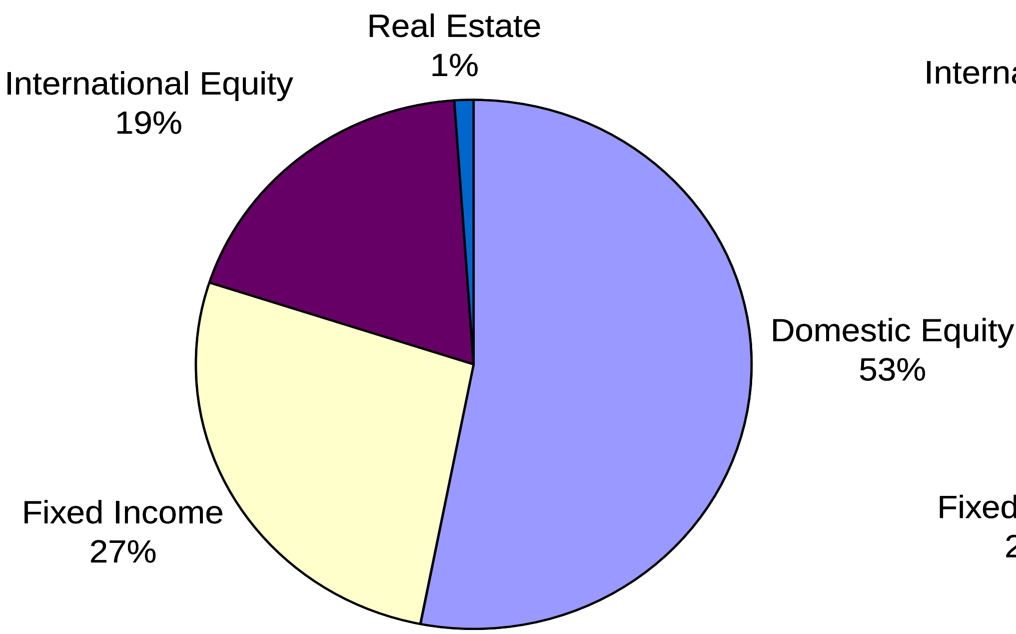
- Private Real Estate
  - NCREIF Property Index was up 3.6% for the quarter:
    - 2.3% capital appreciation
    - 1.3% income
  - Office sector (37.0% of index) was the strongest sector, returning 4.8%
- Public Real Estate
  - Equity REITs were up 2.6% during the quarter



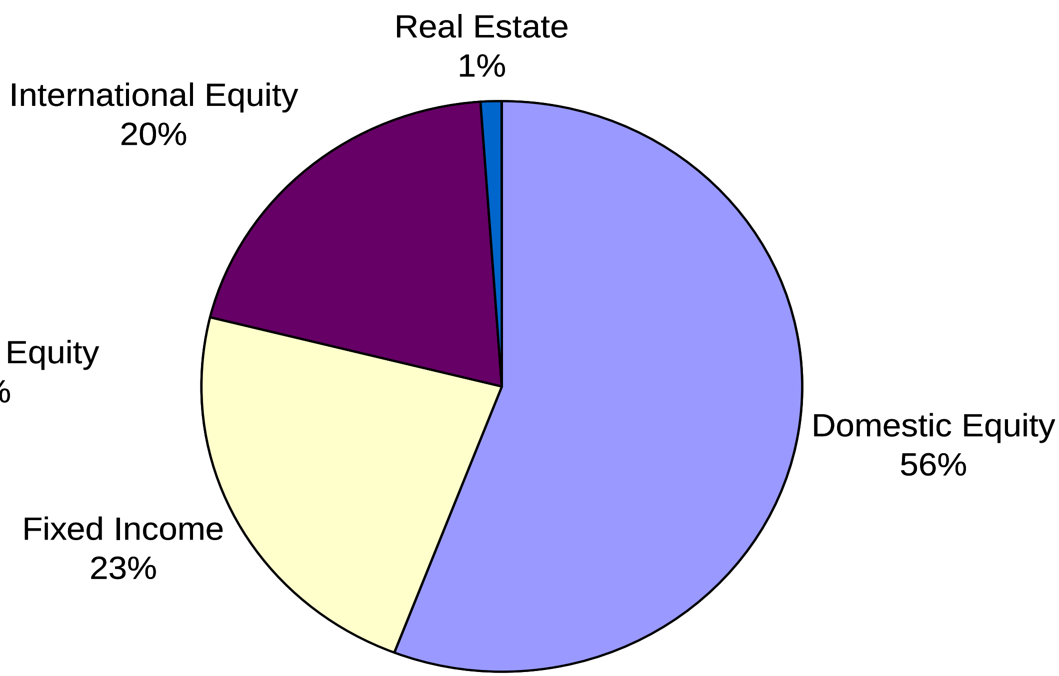
ASRS Total Fund Performance

Total Fund Asset Allocation
September 30, 2007

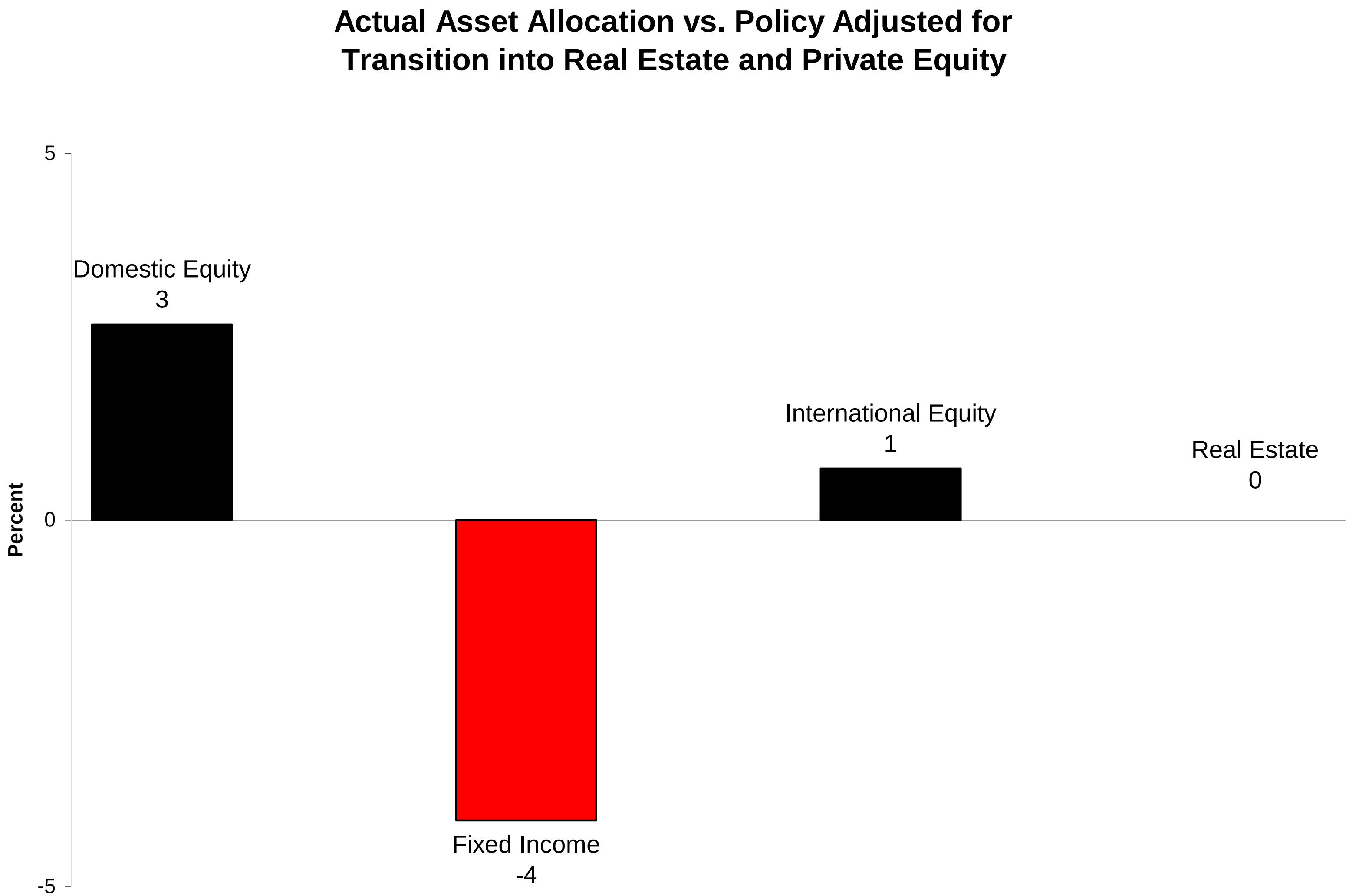
Policy Adjusted for Transition into Real Estate and Private Equity



Actual Asset Allocation



Total Fund Asset Allocation
September 30, 2007



Total Fund Performance
For Periods Ending September 30, 2007

		1 Year	3 Years	5 Years	10 Years	Inception
1)	**ASRS Total Fund (Net)**	14.9%	12.6%	14.1%	7.9%	11.0%
	Benchmark*	15.8%	12.6%	13.9%	7.0%	10.8%
	Excess Return	-0.9%	0.0%	0.3%	0.9%	0.2%

* Interim Benchmark (current): 39% S&P 500, 7% S&P 400, 7% S&P 600, 27% LB Aggregate, 19% MSCI ACWI ex US, and 1% NPI+100 bps
Note: Interim Benchmark incorporates a proration of 5% real estate and 5% private equity

Policy History:
- 7/1/75-12/31/79 – 40% S&P 500/60% LB Aggregate
- 1/1/80-12/31/83 – 50% S&P 500/50% LB Aggregate
- 1/1/84-12/31/91 – 60% S&P 500/40% LB Aggregate
- 1/1/92-12/31/94 – 50% S&P 500/40% LB Aggregate/10% EAFE
- 1/1/95-6/30/97 – 45% S&P 500/40% LB Aggregate/15% EAFE
- 7/1/97-12/31/99 – 50% S&P 500/35% LB Aggregate/15% EAFE
- 1/1/00-9/30/03 – 53% S&P 500/30% LB Aggregate/17% EAFE
- 10/1/03-12/31/06 – 53% S&P 500/26% LB Aggregate/15% MSCI EAFE/ACWI ex US(1)/6% NPI+100 bps
- 1/1/07-present – 31% S&P 500/7% S&P 400/7% S&P 600/26% LB Aggregate/18% MSCI ACWI ex US/6% NPI+100 bps/5% Russell 3000+300 bps

(1) MSCI EAFE/ACWI ex US Benchmark is the MSCI EAFE prior to 10/1/05 and the MSCI ACWI ex US thereafter

Total Fund Performance
For Periods Ending September 30, 2007

		1 Year	3 Years	5 Years	10 Years	Inception
	ASRS Total Fund (Net)	14.9%	12.6%	14.1%	7.9%	11.0%
2)	Actuarial Assumption	8.0%	8.0%	8.0%	8.0%	7.6%
	Excess Return	6.9%	4.6%	6.1%	-0.1%	3.4%
3)	Asset Allocation Target	8.1%	7.6%	7.7%	8.2%	N/A
	Excess Return	6.8%	5.0%	6.4%	-0.3%	N/A
4)	CPI Inflation + 3.75%	6.5%	6.9%	6.6%	6.3%	7.6%
	Wage Inflation + 3.75%	10.9%	9.7%	8.1%	7.7%	8.3%
	Excess Return - CPI	8.4%	5.7%	7.5%	1.6%	3.4%
	Excess Return - Wage	4.0%	2.9%	6.1%	0.2%	2.7%

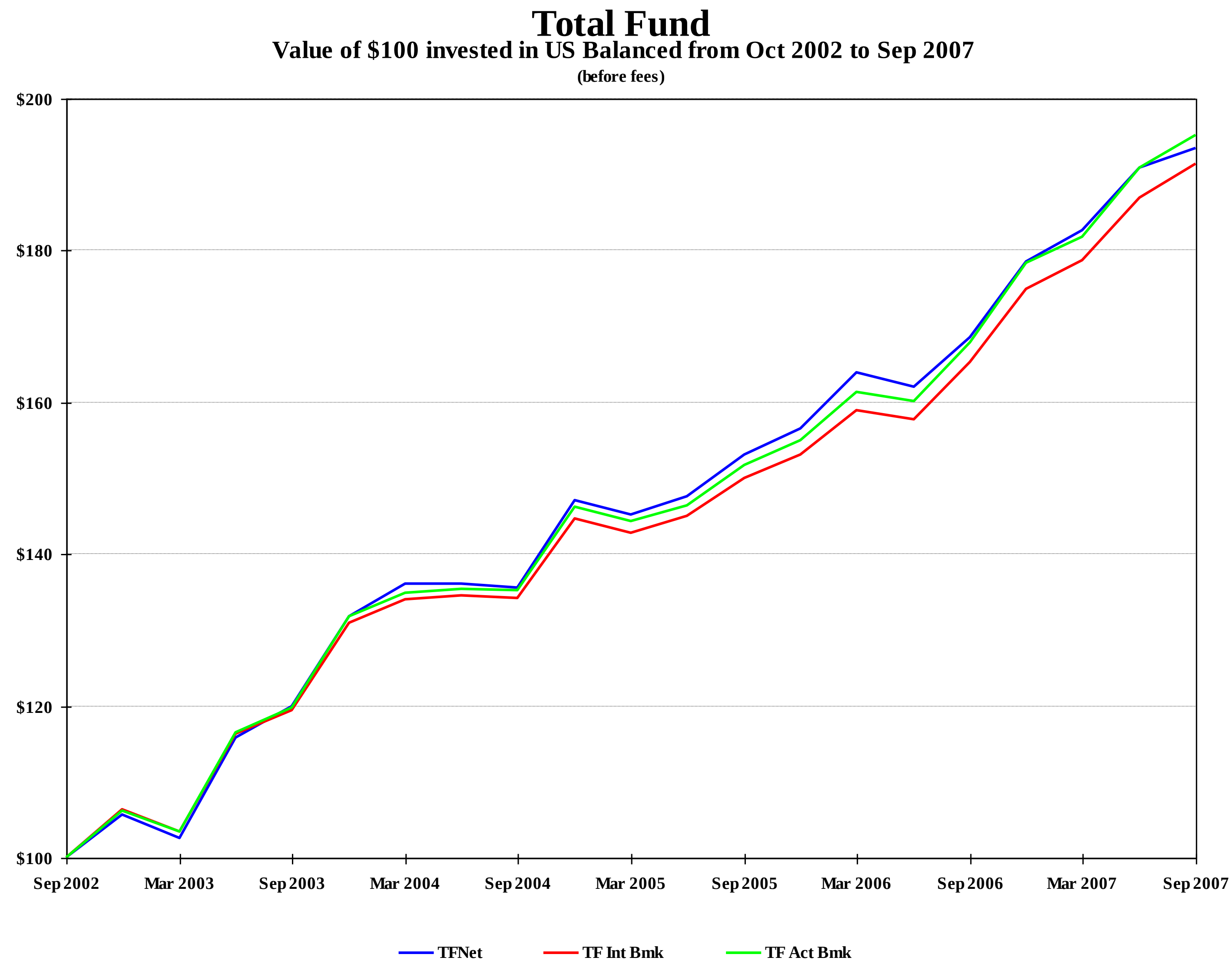
Supplemental Comparison Information*
For Periods Ending September 30, 2007

	1 Year	3 Years	5 Years	10 Years	15 Years
Russell/Mellon Trust Universes					
Master Trust Funds - Total Funds	56	57	51	47	52
Total Funds - Public	69	79	74	64	47
Total Funds Billion Dollar - Public	72	82	78	76	50
Total Funds - Corporate	48	52	49	40	52
Wilshire Trust Universe Comparison Service					
Master Trusts - All	41	42	32	36	41
Public Funds	38	41	34	31	23
Public Funds Greater than $1.0 Billion	67	71	55	46	32
Corporate	38	41	30	37	48
Callan Associates Inc.					
Total Funds	52	58	47	48	49
Public Funds	58	64	46	51	39
Public Funds - Large (>1B)	79	89	64	65	43
Corporate Funds	43	54	45	43	52

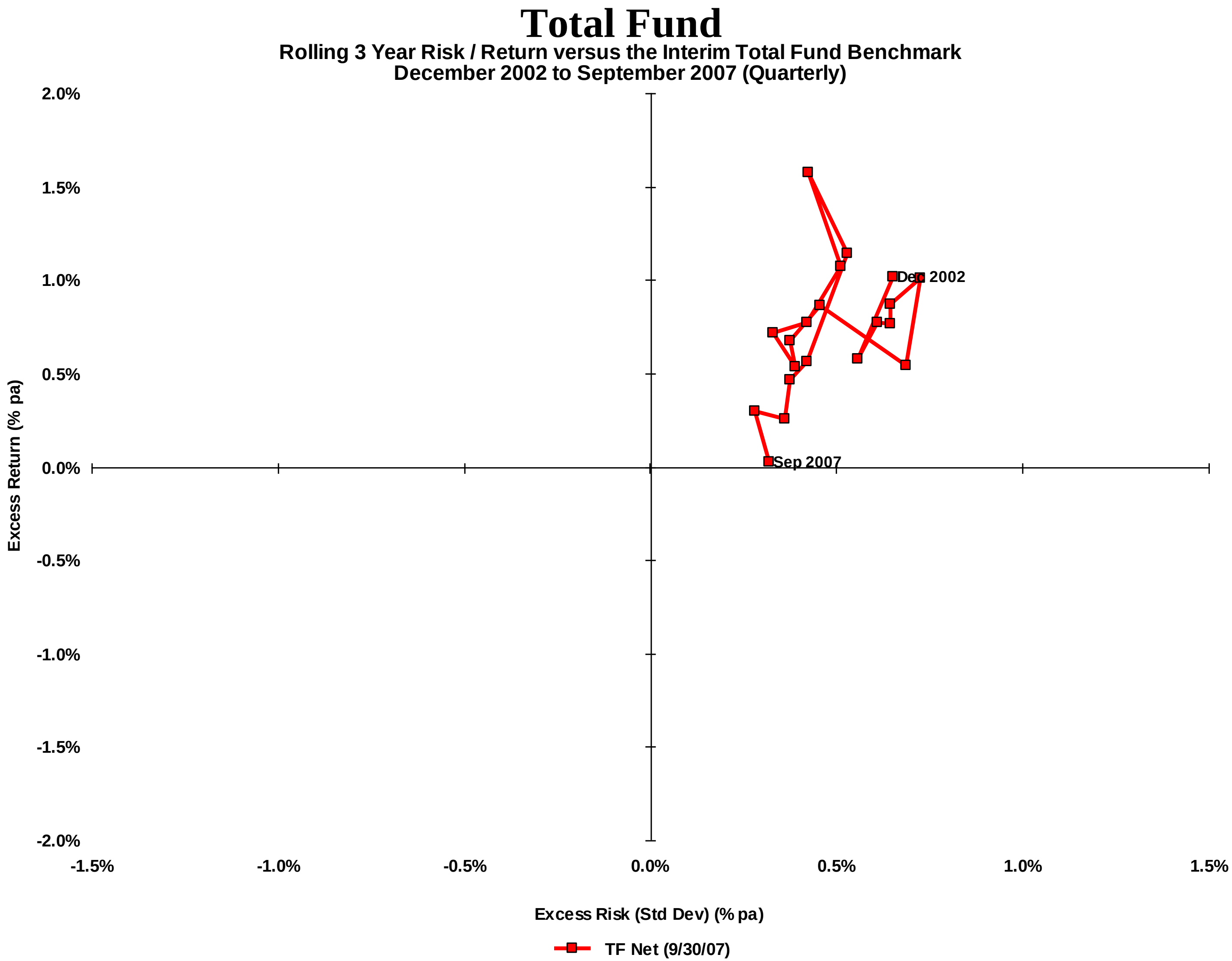
*The information contain herein is for comparison purposes only and is not a Total Fund performance benchmark. Peer universe comparisons are subject to several limitations, including: peer groups are not comprehensive, several funds are included in multiple peer groups, peer groups are constructed using gross of fees returns, and survivorship bias in that poorly performing funds may no longer continue to report results.

Note: Universes are constructed with gross of fees returns; therefore, the ASRS rank is based on gross of fees returns.

Total Fund Growth



Risk/Return Analysis



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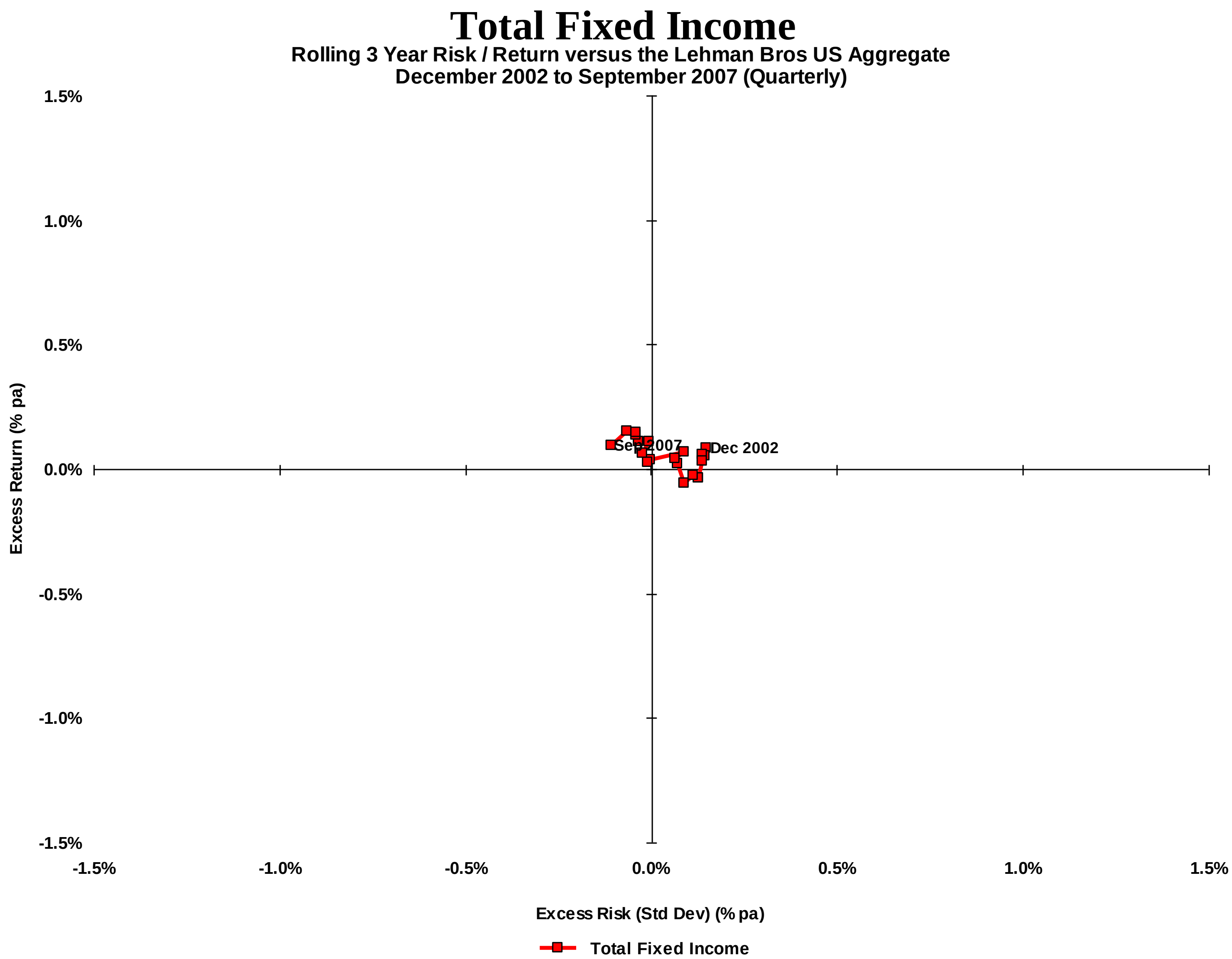

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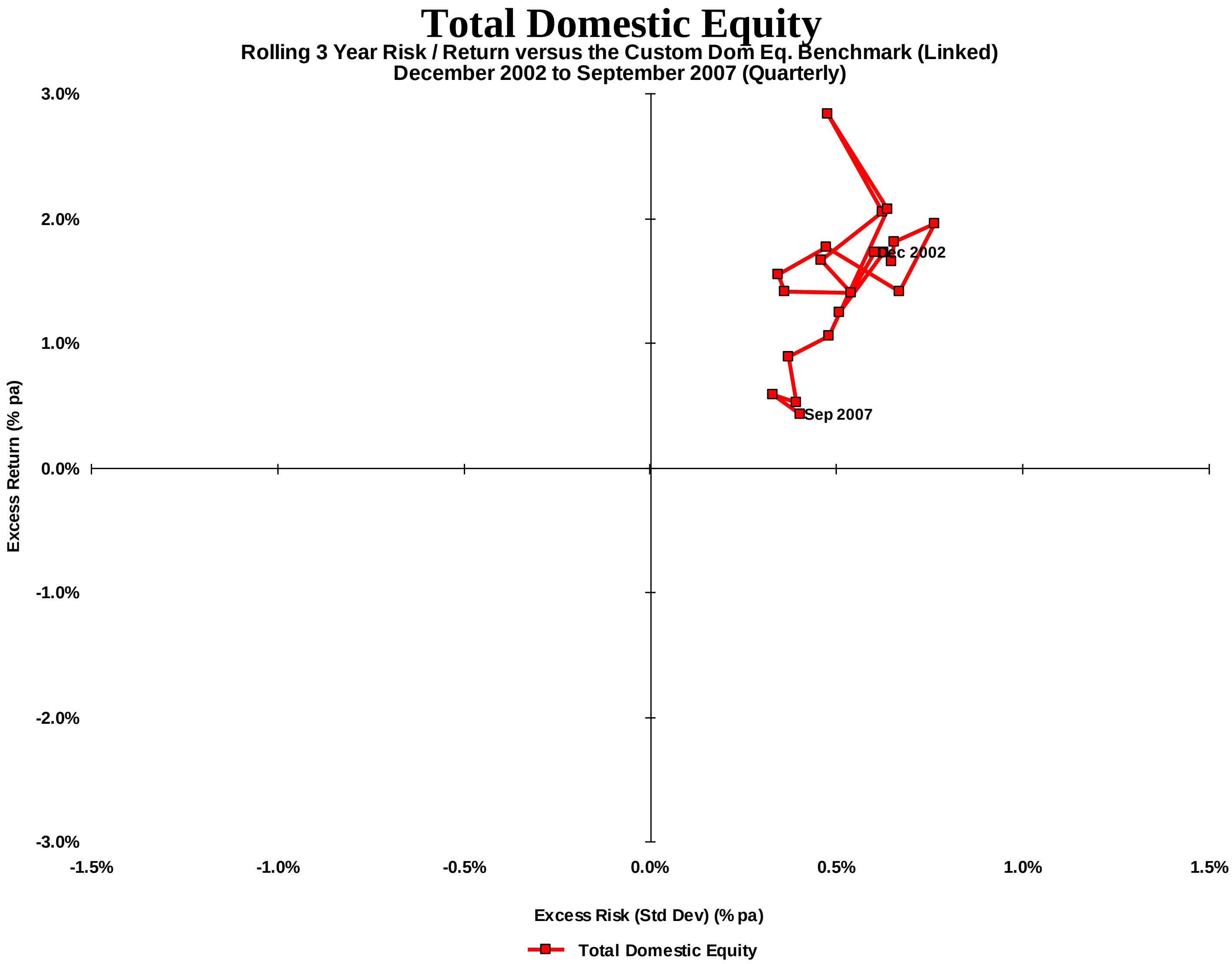

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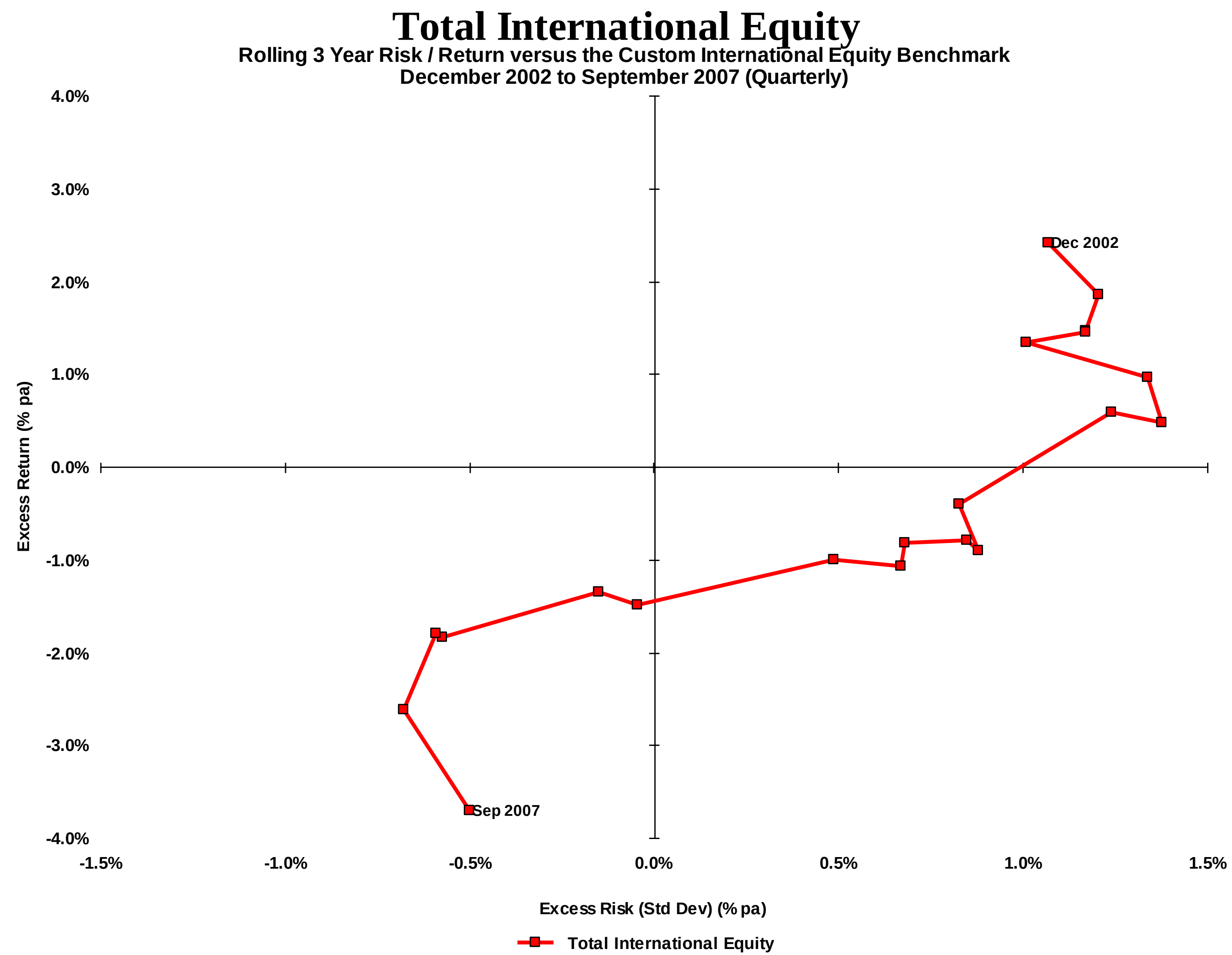

Performance vs. Benchmarks
For the 3 Years Ending September 30, 2007

	Return	Assumed ROR	Std. Dev.
Total Fund	12.6%	7.6%	5.6%
Benchmark[1]	12.6%		5.2%
Domestic Fixed	4.0%	4.6%	3.0%
LB Aggregate	3.9%		3.1%
Domestic Equity	13.5%	8.5%	7.2%
S&P Custom Bmk[2]	13.1%		6.7%
Intl. Equity	21.8%	8.6%	9.7%
MSCI Custom Bmk[3]	25.5%		10.2%
Real Estate	N/A	-	N/A

(1) Interim Benchmark (current): 39% S&P 500, 7% S&P 400, 7% S&P 600, 27% LB Aggregate, 19% MSCI ACWI ex US, and 1% NPI+100 bps
Note: Interim Benchmark incorporates a proration of 5% real estate and 5% private equity
(2) S&P 500 prior to 1/1/07 and 74% S&P 500, 13% S&P 400, 13% S&P 600 thereafter
(3) MSCI EAFE/ACWI ex US Benchmark is the MSCI EAFE prior to 10/1/05 and the MSCI ACWI ex US thereafter

Performance vs. Benchmarks
For the 5 Years Ending September 30, 2007

	Return	Assumed ROR	Std. Dev.
Total Fund	14.1%	7.7%	7.9%
Benchmark[1]	13.9%		7.5%
Domestic Fixed	4.2%	4.8%	3.2%
LB Aggregate	4.1%		3.3%
Domestic Equity	16.3%	8.7%	10.2%
S&P Custom Bmk[2]	15.4%		9.7%
Intl. Equity	23.0%	8.9%	14.0%
MSCI Custom Bmk[3]	25.1%		13.5%
Real Estate	N/A	-	N/A

(1) Interim Benchmark (current): 39% S&P 500, 7% S&P 400, 7% S&P 600, 27% LB Aggregate, 19% MSCI ACWI ex US, and 1% NPI+100 bps
Note: Interim Benchmark incorporates a proration of 5% real estate and 5% private equity
(2) S&P 500 prior to 1/1/07 and 74% S&P 500, 13% S&P 400, 13% S&P 600 thereafter
(3) MSCI EAFE/ACWI ex US Benchmark is the MSCI EAFE prior to 10/1/05 and the MSCI ACWI ex US thereafter

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